

## ABSTRACT

Featured is a high power, broadband superfluorescent source with very low relative intensity noise (RIN) including a seed source, a modulator operably coupled to the seed source and a polarization maintaining (PM) amplifier operably coupled to the modulator. The output of the seed source is processed in the modulator so the modulator outputs a polarized optical output to the PM amplifier. The PM amplifier amplifies the modulated, polarized optical output so as to provide an amplified polarized optical output therefrom. Also featured is a feedback circuit operably coupled to the PM amplifier to control the transmission of the modulator so as to minimize the amplitude fluctuations in the output signal. Such a source is advantageous in high precision fiber optical rotation sensors and multiplexed strain sensing arrays.